MOBILE-MEASURE: A Tool For The Assessment of Mobile Source Emissions on a Regional or Urban Scale.

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MOBILE-MEASURE is intended to be a demonstration of macro-scale highway vehicle emissions modeling—the fusion of MOBILE6.x and MEASURE within a GIS framework. MOBILE is an emission factor model and MEASURE is an activity model that uses a GIS to provide enhanced spatial allocation to an emission inventory. MOBILE is EPA's official emission factor model for highway vehicle inventory development. MEASURE evolved out of research performed by the Georgia Institute of Technology—an activity model that includes advancements in spatial and temporal allocation, and vehicle modal operations. The principal benefits of developing a model that links MOBILE and MEASURE capabilities together are as follows: 1) area-wide emissions estimates would be consistent with the MOBILE-based emissions estimates that have been used for SIP planning purposes; 2) the development of area-wide "macro-scale" emissions using MOBILE with credible allocation to smaller geographic areas (e.g., allocation to city or other small-scale geography) to meet additional air pollution modeling needs such as dispersion modeling studies; 3) a modeling tool can be developed that is capable of producing regional or national emissions estimates, but requires moderate human and computer resource commitments; 4) the tool can serve as a prototype mechanism for development of a heavy-duty diesel module for MEASURE which is of particular importance to the Atlanta non-attainment area—most of Atlanta's air quality problems are linked to emissions from mobile sources with heavy-duty trucks of particular concern; 5) the tool facilitates the addition of more pollutants, such a PM2.5/PM10, and air toxics into MEASURE through linkage with MOBILE6.1/6.2; 6) a modeling tool can be developed that provides regional scale mobile source emissions data consistent with MEASURE's enhanced spatial and temporal allocation capabilities for input to MODELS-3 regional air quality simulations; and 7) the tool can serve as a prototype for some macro-scale features of the Multiscale Motor Vehicle and Equipment Emission System (MOVES) being developed by OTAQ to replace MOBILE6 in the future.

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